The Water Utility Enterprise

Final-July 1983

Santa Clara Valley Water District

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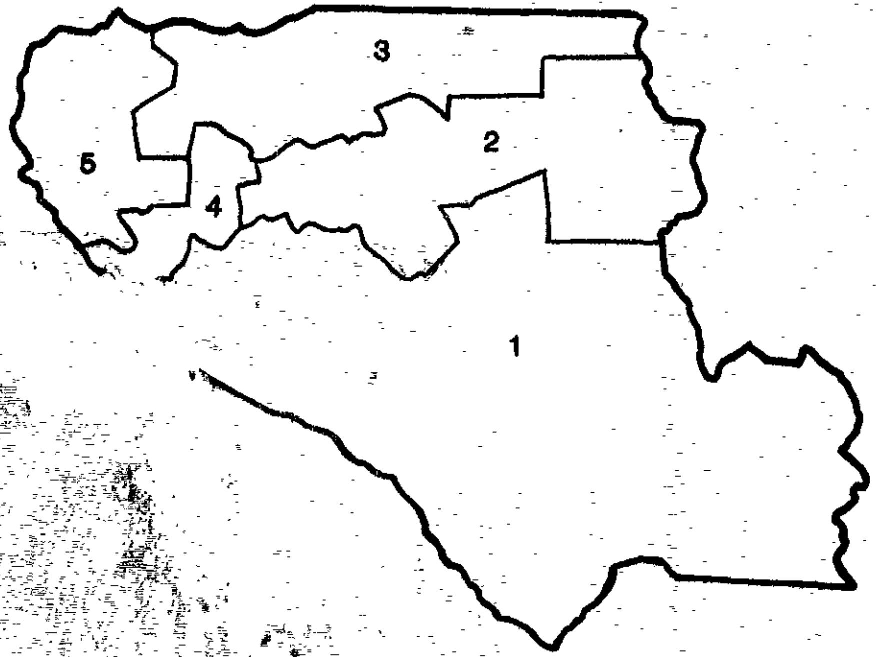

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Santa Clara Valley Water District

5750 ALMADEN EXPRESSWAY
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Rainfall in Santa Clara Valley during 1981-82 was about 160% of normal and produced above average runoff to fill the District's reservoirs and add more than 80,000 acre feet to groundwater basin storage. The 1982-83 rainfall was about 200% of normal and was the highest recorded in the County since the late 1800's. It is anticipated that the District's local and imported water supplies will meet the County's 1983 water needs and provide water for groundwater replenishment.

The outlook is good for the District to receive its full entitlement of water from the State Water Project in 1983-84. As previously anticipated, however, there was a sharp increase in the power charges for State project water beginning in April 1983 when new power contracts went into effect.

Construction progress continues on the San Felipe Division of the Federal Central Valley Project, and as of June 1983, the Pacheco and Santa Clara Tunnels were complete. Work has begun on Section I of the Santa Clara Conduit and on the Pacheco Pump Station. The Bureau of Reclamation has advertised for bids on Section I of the Pacheco Pipeline, and anticipates advertising for the remaining major facilities of the project in 1984. Continued construction progress and adequate federal funding will be necessary to complete the project and provide San Felipe water to the District by 1988.

Progress continues on the District's In-County Distribution System. Almaden Valley Pipeline II, and the second phase of the Cross Valley Pipeline are complete. Construction has commenced on the third phase of the Cross Valley Pipeline.

Since it was determined that expansion of the Penitencia Water Treatment Plant would not be prudent considering the geological conditions at the site, the District has studied and adopted a new alternative to meet the east-side and South San Jose water demands. The major features of the selected alternative are the Santa Teresa Water Treatment Plant, the Snell Pipeline, and the Calero Pipeline. A consulting engineering firm has recently been selected to do the design of the treatment plant.

A report, currently under public review, has examined alternatives to meet the supplemental water needs of South Santa Clara County. The report concludes that groundwater would be the most efficient source for meeting water needs of that area and recommends that land for future recharge facilities be purchased as soon as possible.

Following meetings with the Treated Water Contractors, the Agricultural Water Advisory Committee and the Santa Clara Valley Water Commission, the District Board of Directors adopted water rates and tax revenues for 1983-84 which are shown at the end of this report. The groundwater charges and equivalent basic user rate are $80 per acre-foot for municipal and industrial water and $20 per acre-foot for agricultural water in Zones W-2, W-3.1, W-3.2, W-3.3, W-3.5. There are no groundwater charges for Zones W-5 or W-6 in 1983-84.

John T. O'Halloran
General Manager

AN AFFIRMATIVE ACTION EMPLOYER

19R934

This is the twelfth annual report on the status of the Santa Clara Valley Water District's Water Utility Enterprise. The purpose of this report is to provide information on the following items:

- Current and future water requirements of Santa Clara County
- Current and future water supply available to meet those requirements
- Future capital improvement needs
- Future financial needs of the Water Utility Enterprise including expenditures and a means of financing them
- Water charges to be levied in any zone or zones of the District for the next fiscal year

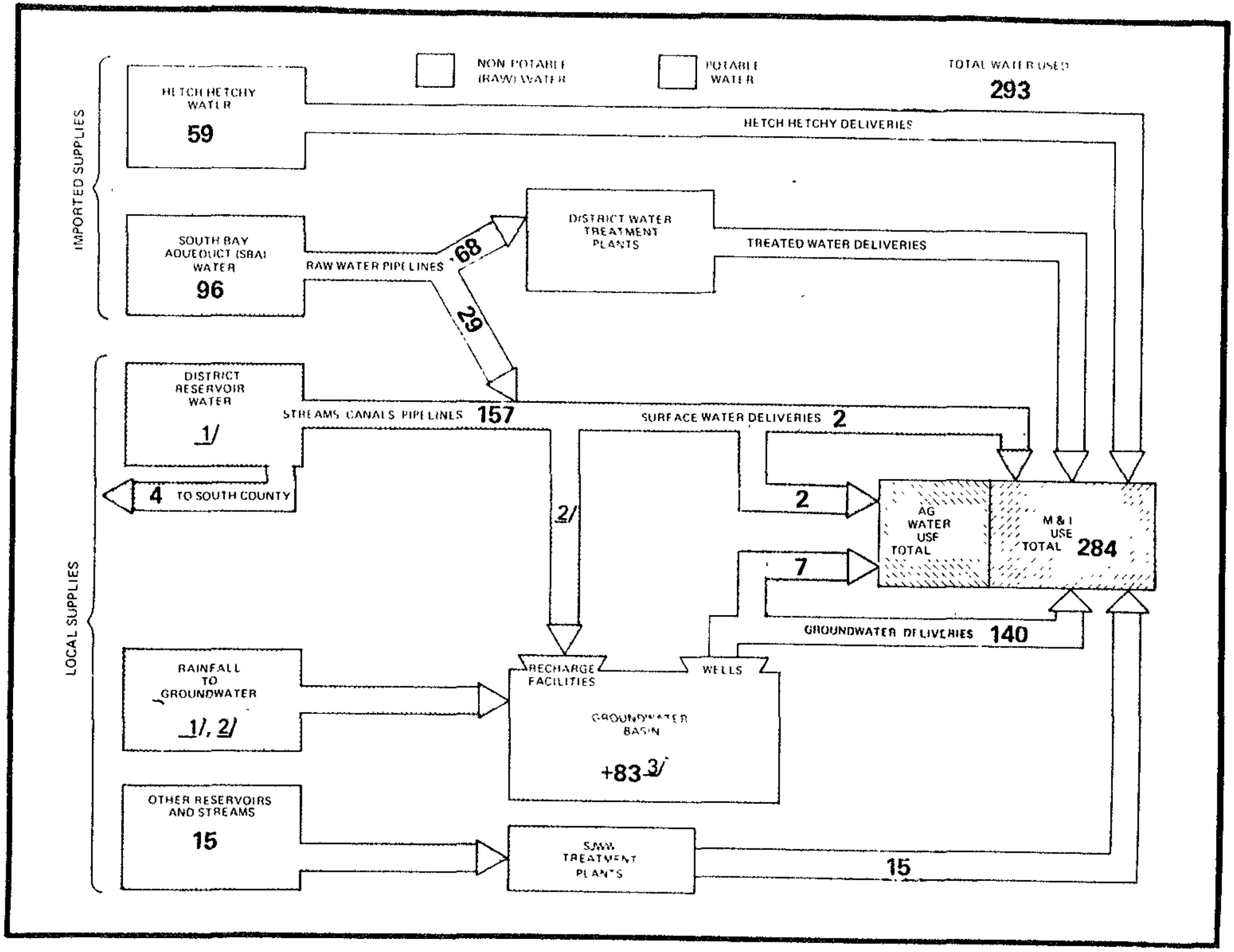
1981-82 Water Picture...

Rainfall in Santa Clara County during 1981-82 was well above average resulting in runoff that filled District reservoirs and added water to the groundwater basin.

During this period, total water use in North Santa Clara County was about 3% less than in 1980-81 with M&I water use down about 2% and agricultural water use down 25%.

The 1981-82 annual water supply and use for North Santa Clara County are summarized in the diagram at the right. As shown, the total water use was 293,000 acre-feet, while the annual supply amounted to 414,000 acre-feet. The difference of 121,000 acre-feet was put into reservoir and groundwater basin storage to meet future needs.

WATER SUPPLY AND USE
NORTH SANTA CLARA COUNTY
1981-82
(All values in 1,000 Acre-Feet)



1/ Total of District reservoir water and rainfall to groundwater is 248,000 acre-feet including 39,000 acre-feet increase in reservoir storage but excluding waste to San Francisco Bay; distribution uncertain.

2/ Total of rainfall to groundwater and recharge through streams and ponds is about 230,000 acre-feet; distribution uncertain.

3/ 83,000 acre-feet added to groundwater basin storage

Water Use...

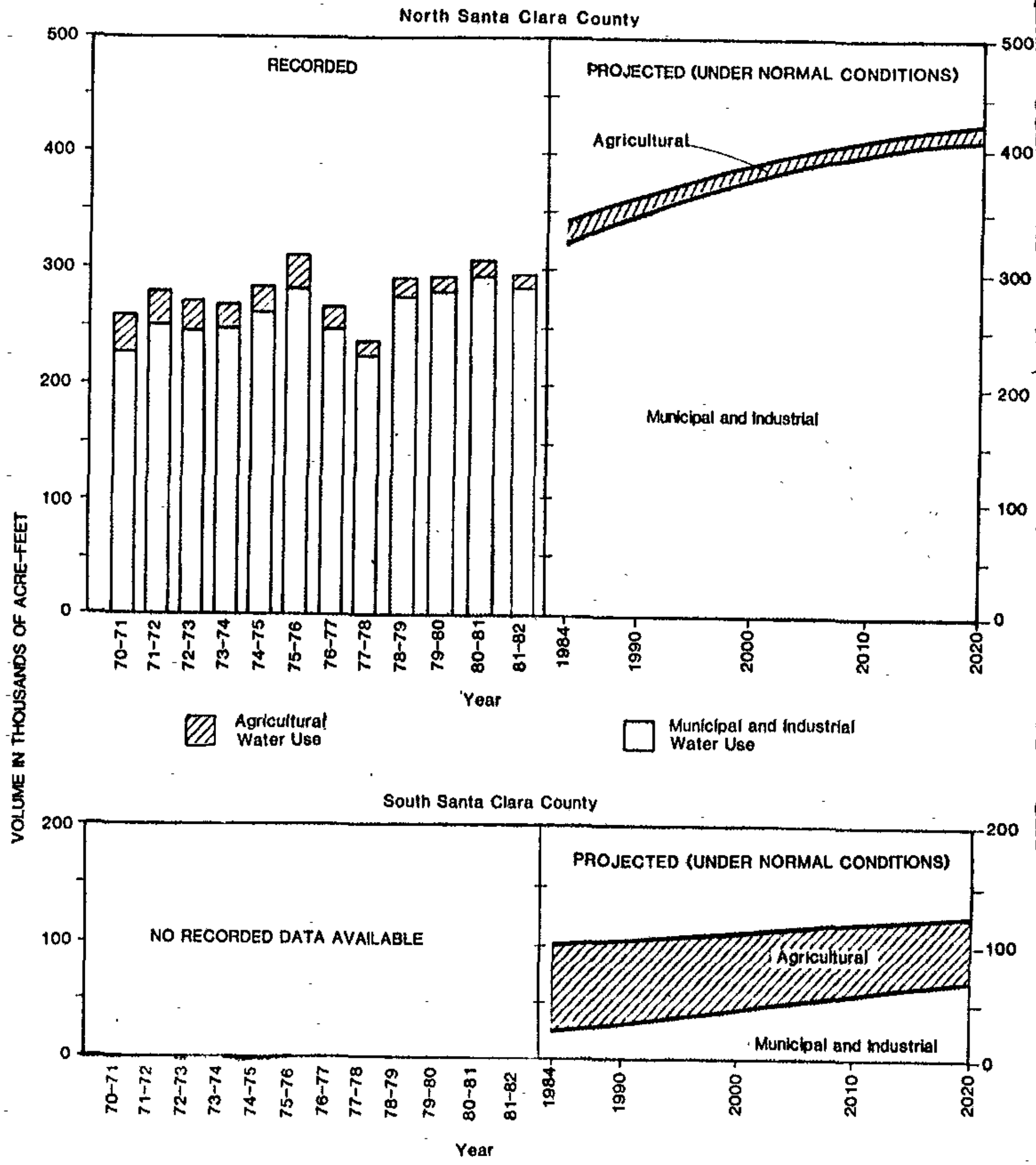
Water use in Santa Clara County is categorized as either agricultural or municipal and industrial. Recorded North County water use since 1970-71 is shown to the right.

Water use in North Santa Clara County is predominantly municipal and industrial. The projections show an increase through 2020 when the total annual water use is estimated to be 420,000 acre-feet. Agricultural water use is expected to continue to decrease through 2020.

Water use in South Santa Clara County, the area south of Metcalf Road, has been primarily agricultural and has been met by available local supplies, mainly from groundwater pumping. In South Santa Clara County, it is anticipated that municipal and industrial water requirements will continue to increase while agricultural requirements will decrease. Total annual water use in South Santa Clara County is projected to increase to about 125,000 acre-feet by 2020.

Presently, portions of Zone W-5 in the South County do not have a formal groundwater production measurement program. Thus, estimates of water use in South County have been primarily based on land use and can only be considered approximate.

RECORDED AND PROJECTED WATER USE



...and Water Supply

Present sources of water supply in North Santa Clara County consist of locally conserved water and imported water from the Hetch Hetchy and South Bay Aqueducts. The recorded annual water supply and water use in North Santa Clara County since 1970-71 are shown to the right.

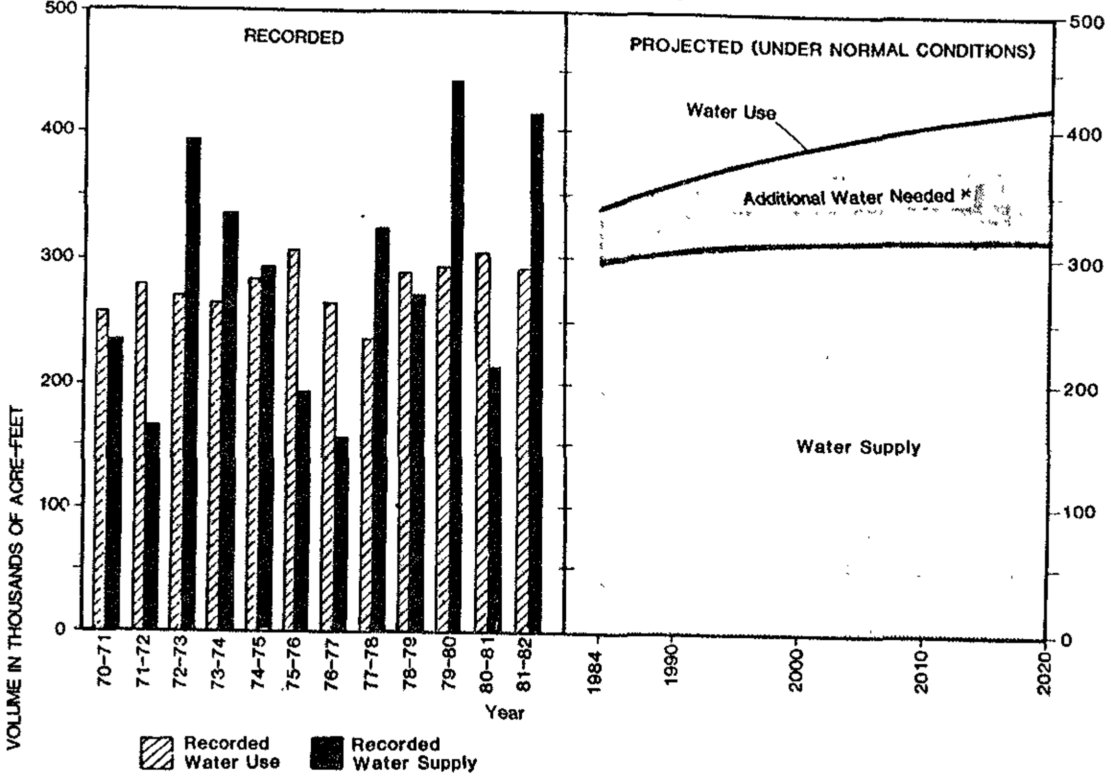
In 1981-82, local water supplies in the County were greater than average. During this period, water was added to reserves in the groundwater subbasins and surface reservoirs.

In 1982-83 rainfall was about 200% of average and water use was below average. Thus local supplies will be sufficient when combined with imported supplies to meet the County needs for 1983 and provide ample water for groundwater basin replenishment.

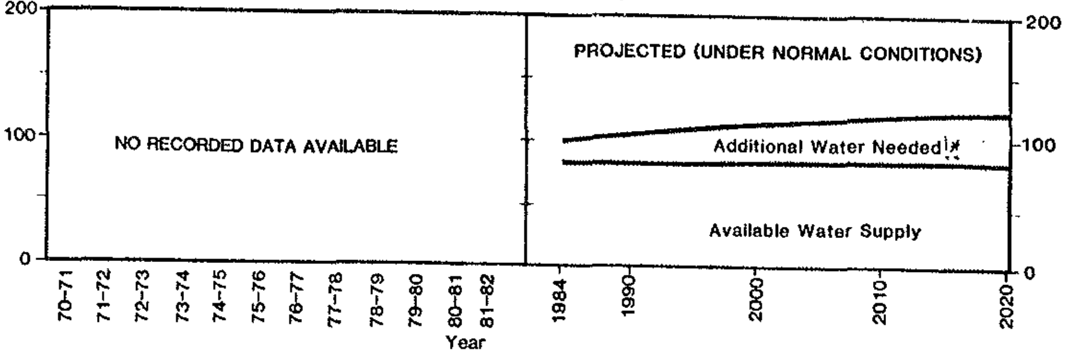
As shown in the graphs on the right, projected future average water use will exceed normal available water supply on a yearly basis. As a result, under normal conditions, the groundwater subbasins in the County are expected to function in a water-deficit condition until supplemental water is available from the San Felipe Division in the late 1980's. In such event, it may become necessary to intensify the District's local water savings program to avoid excessive mining of the groundwater subbasins and possible land surface subsidence.

RECORDED WATER USE AND SUPPLY
AND
PROJECTED WATER REQUIREMENTS AND SUPPLY

North Santa Clara County



South Santa Clara County



* Additional water needed to be supplied from the San Felipe Division Central Valley Project.

In-County Water Distribution System...

In 1975, the District published its Master Plan describing projects needed to meet projected water needs in Santa Clara County through the year 2020. The construction program of new facilities needed to meet projected water demands has been recently updated to meet changing conditions. This reanalysis became necessary when it was determined that it would not be prudent to expand the Penitencia Water Treatment Plant because of unstable geological conditions at the site. Several alternatives were evaluated that would meet the east-side and South San Jose water needs. The major facilities of the adopted alternative are a large Santa Teresa Water Treatment Plant, together with the Snell and Calero Pipelines. Under this alternative, construction of the west-side facilities, including Rinconada Water Treatment Plant Expansion, West Reservoir and Delivery Main and the Parallel West Pipeline would be scheduled for the 1990-92 period.

A master plan report on the South County, currently under public review, supports a groundwater recharge and extraction system for meeting projected supplemental South County water needs. The report recommends purchase of land as soon as possible to reserve it for the proposed recharge facilities.

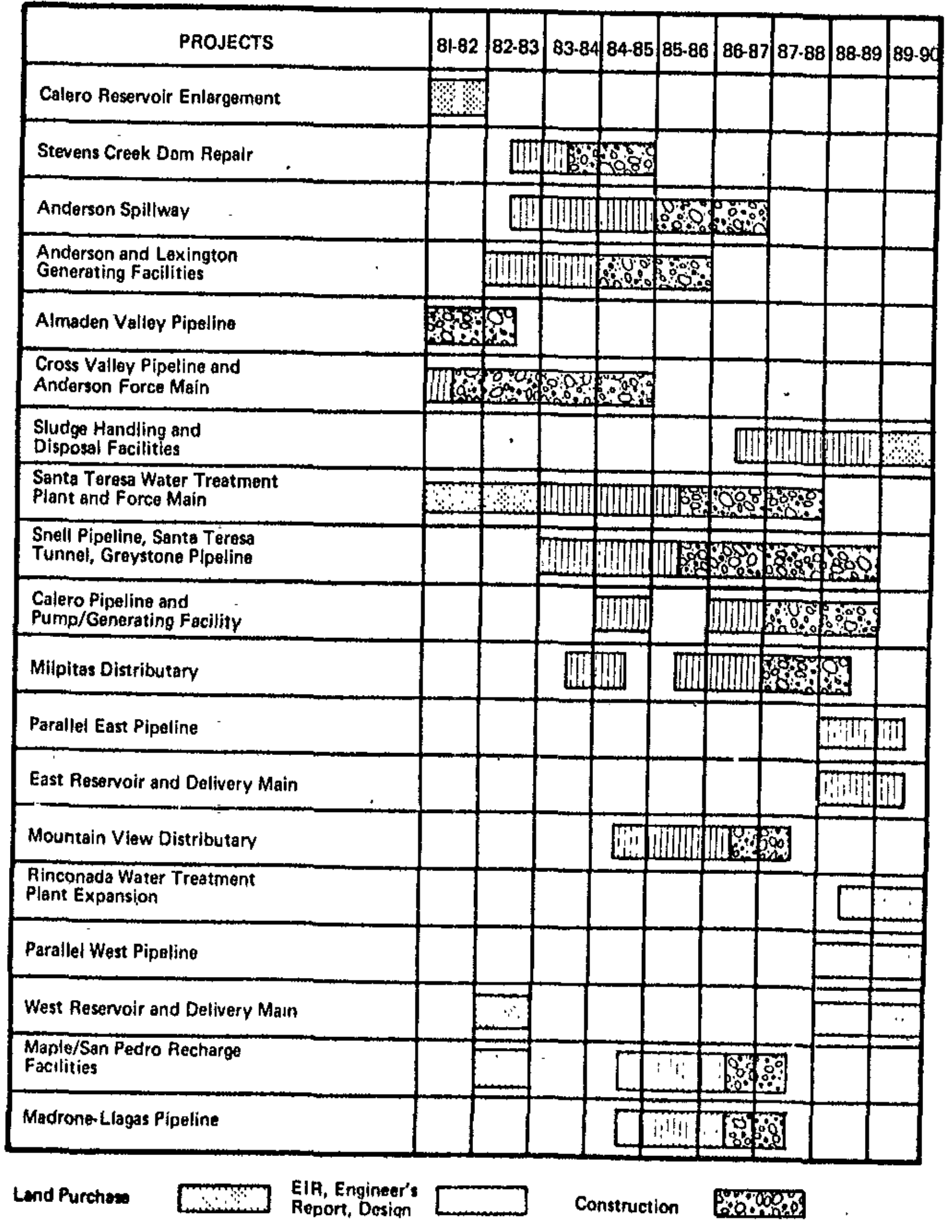
The District recently evaluated several dam sites in the County for hydroelectric power generation potential. Three sites have been found to have favorable benefit-cost ratios; Anderson, Calero and the Kirk Ditch Turnout from the Central Pipeline. The District is proceeding with the permit/license process on these facilities.

The District is under a mandate from the State Division of Safety of Dams to reinforce Stevens Creek Dam and to increase the spillway capacity of Anderson Dam.

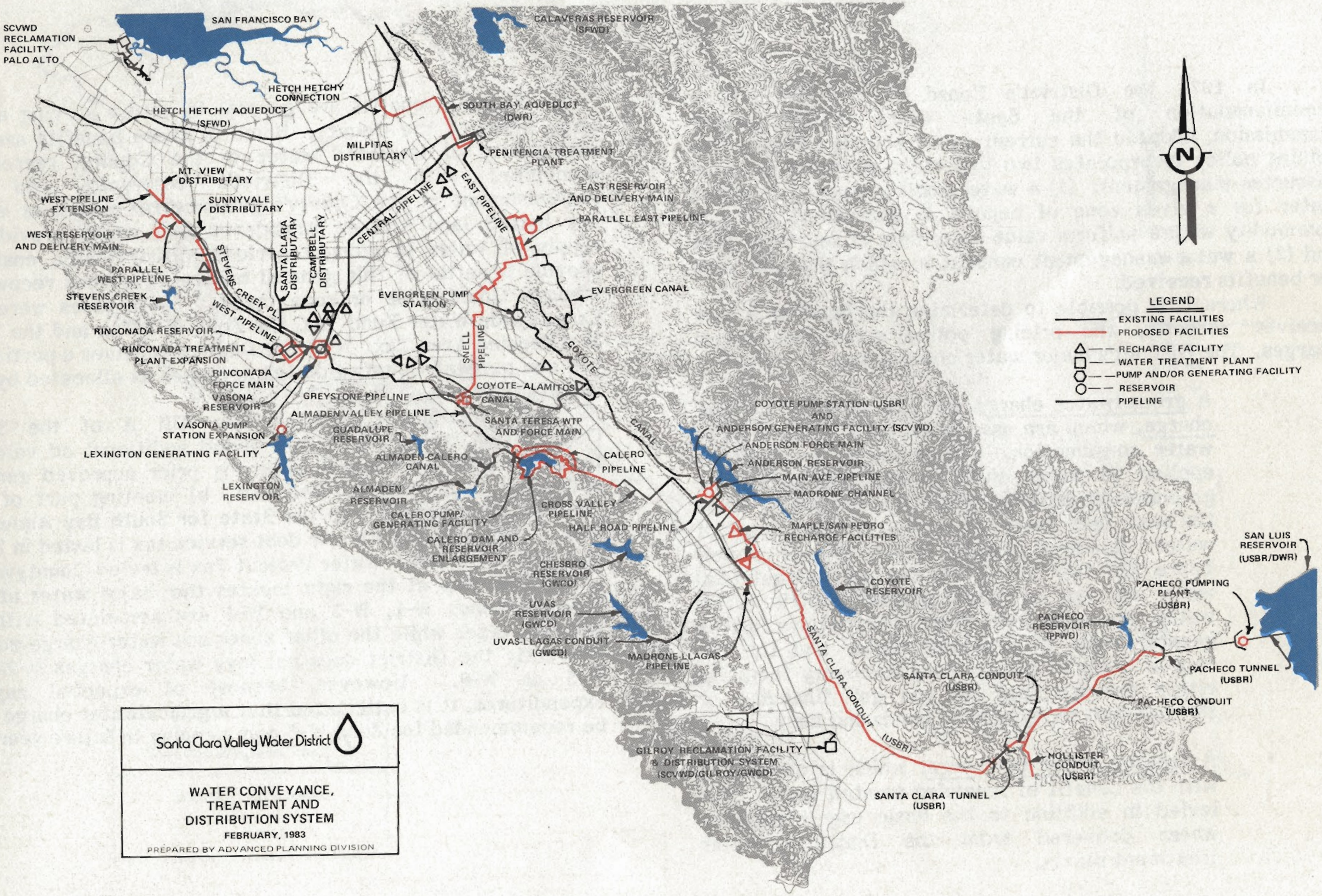
Also, the District is faced with a substantial sludge handling and disposal problem at its water treatment plants. Results of a study on this problem show that sludge dewatering and handling facilities will be required at Penitencia and Rinconada Water Treatment Plants and that it will be necessary to secure a long-term sludge disposal site.

The map on the following page shows the location of the District's major existing and proposed facilities.

PROJECTED NEW FACILITY CONSTRUCTION PROGRAM
FOR THE WATER UTILITY ENTERPRISE
1981-82 THROUGH 1989-90



...Improvement and Expansion



Santa Clara Valley Water District

WATER CONVEYANCE,
TREATMENT AND
DISTRIBUTION SYSTEM
FEBRUARY, 1983
PREPARED BY ADVANCED PLANNING DIVISION

Sources of Revenue...

In 1971 the District's Board of Directors, upon recommendation of the Santa Clara Valley Water Commission, adopted the current water pricing policy. This pricing policy incorporates two important concepts in water resources management: (1) a water pooling concept in which water for a given zone of benefit is considered a single commodity with a uniform value regardless of source or cost and (2) a water management concept in which the user pays for benefits received.

Where it is possible to determine the benefits a user receives directly, the pricing policy establishes water charges. The District's major water charges are:

- A groundwater charge and equivalent basic user charge, which are associated with the benefit of water consumption. The groundwater charge is applied to water that is extracted from the groundwater basin in water charge zones, while the basic user charge is applied to other types of water delivered within water charge zones. There are two rates, one for agricultural (Ag) water and one for municipal and industrial (M&I) water. Revenue from these charges pays for the general costs of providing water and for the capital costs of constructing in-county facilities either through "pay as you go" financing or through debt repayment of bonds and loans.

- A treated water surcharge, which is associated with the benefit of receiving treated water. It is levied in addition to the basic user charge on water delivered from the District's water treatment plants.

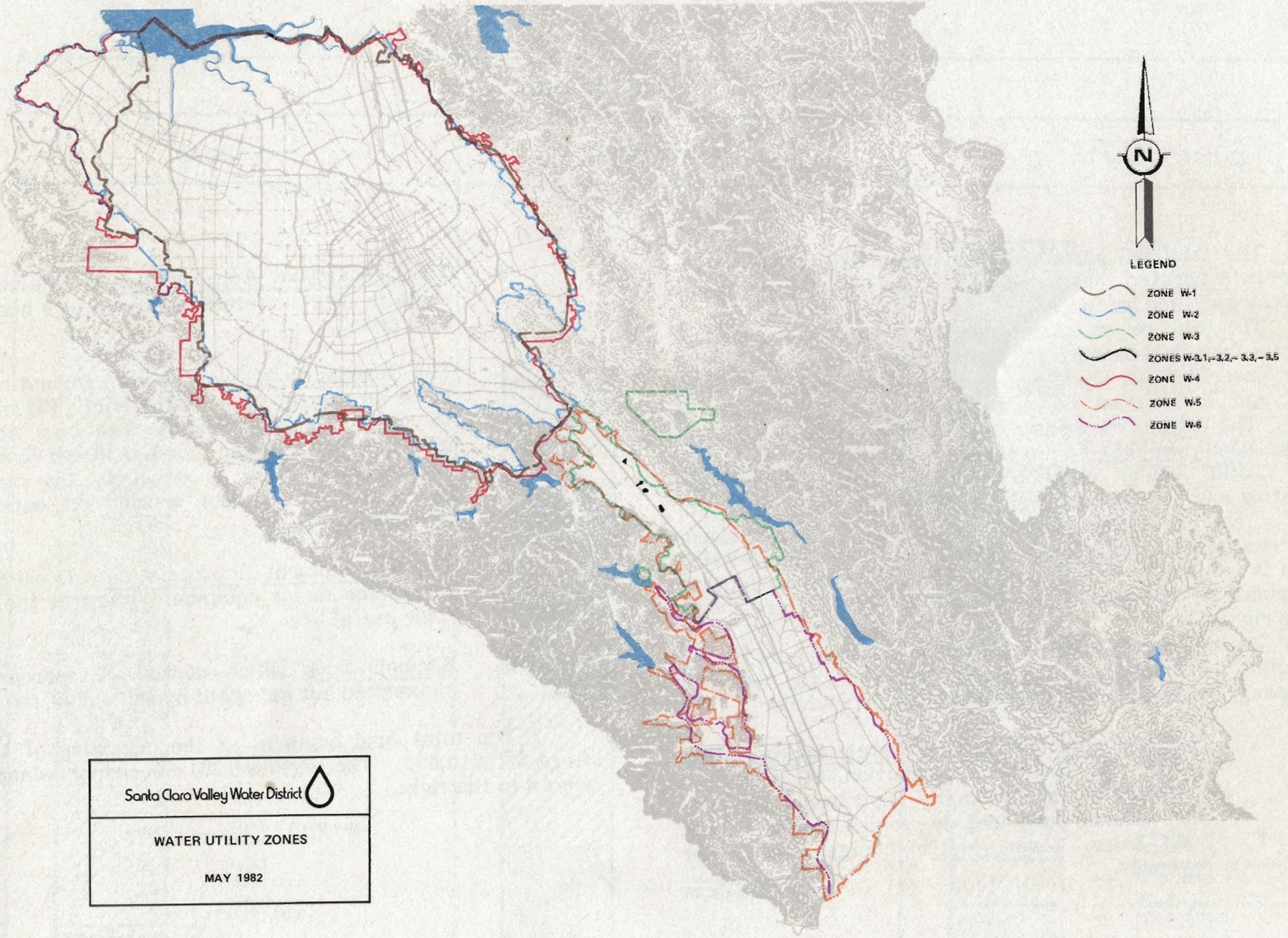
Several benefits are general in nature serving all or large areas of the County. Some of these benefits are the availability of imported water to the County, recreation associated with the District's reservoirs and the replenishment of the County's groundwater subbasins which has halted land surface subsidence and which provides a supply of water in drought periods. Historically, costs to provide benefits of this general nature have been recovered through Countywide or zone taxes. These taxes were the Countywide Water Fund Tax, the Zone W-3 Tax and the Zone W-4 Service Area Tax. Now the District receives a portion of the one percent Countywide tax revenues as allocated by the County Assessor.

In accordance with Article XIII A of the State Constitution, the District has levied additional ad valorem taxes for the purposes of a) paying prior approved general obligation bond debt service and b) meeting part of the contractual obligations to the State for South Bay Aqueduct water. The District's major debt service tax is levied in Zone W-1, while the State Water Project Tax is levied Countywide.

The map at the right locates the major water utility zones. Zones W-1, W-3 and W-4 are associated with ad valorem taxes while the other zones are water charge zones. Currently the District does not levy water charges in Zones W-5 or W-6. However, because of expected capital expenditures, it is anticipated that a groundwater charge will be recommended for Zone W-5 commencing in future years.

(Revised 2/23/83)

. . .Related to Costs of Providing Benefits



The Financial Picture ...

The financial picture of the Water Utility Enterprise has been separated into three parts: revenue, expenditures and year-end fund balances.

The total revenue for a particular year is made up of revenue from water charges, taxes, grants, bonds, loans and other miscellaneous sources. Revenue advanced from bond sales and loans must be repaid from water charges and taxes. The various components of the total revenue received by the District in 1981-82 are shown to the right.

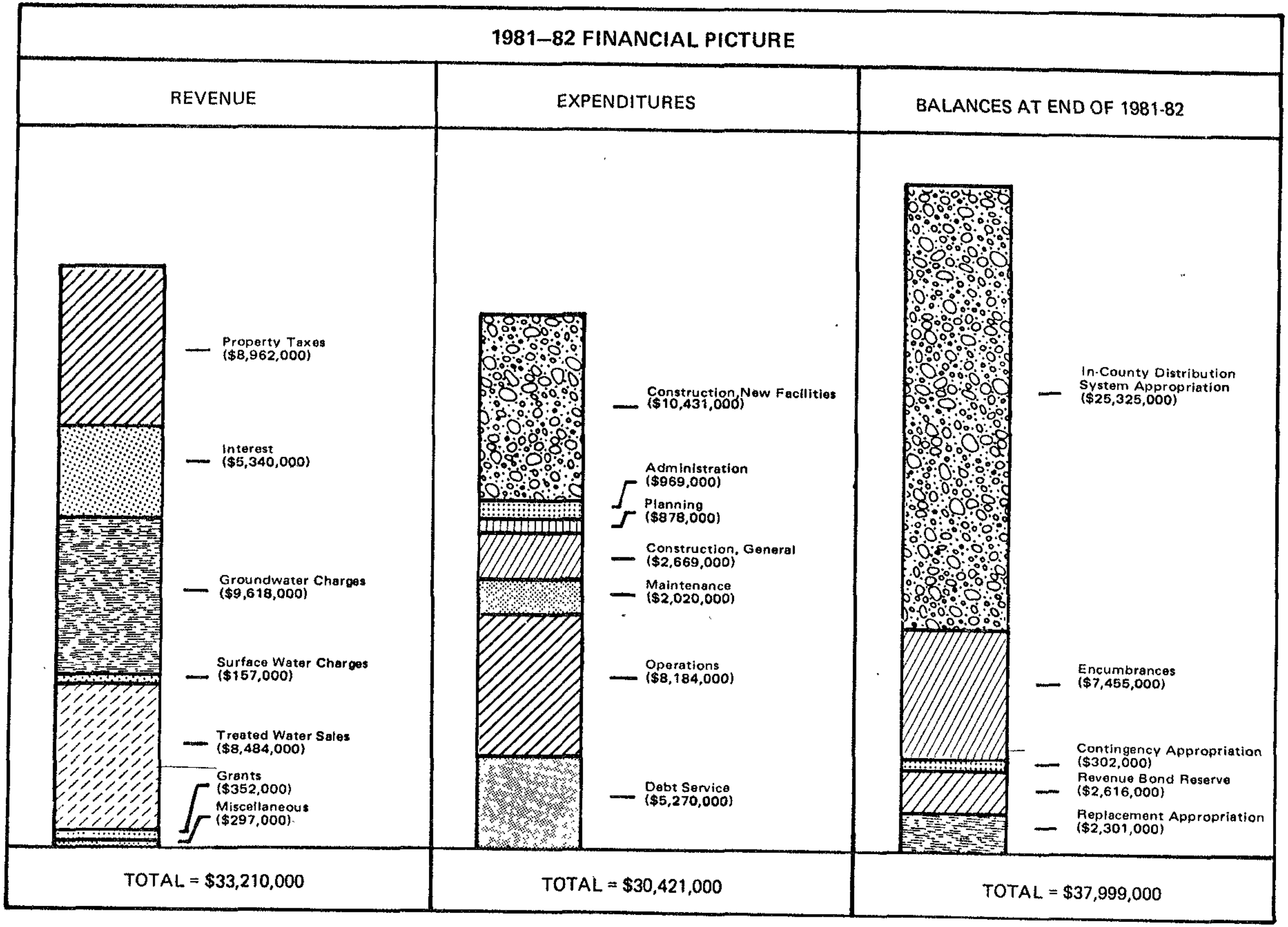
Total annual expenditures are made up of both operating and non-operating costs. They include the program costs for Administration, Planning, Construction, Maintenance and Operations. Also included is Debt Service which is the repayment of bonds sold to finance new facility construction. The actual expenditures for 1981-82 are shown to the right.

The year-end fund balances, the third element of the financial picture, have been appropriated for specific purposes. The various year-end fund balances include:

1. The In-County Distribution System Appropriation which will finance construction of necessary facilities of the In-County Distribution System. This balance may include monies received from bond sales, taxes, water charges and other revenues.
2. The Contingency Appropriation is an amount set aside to meet unforeseen expenditure needs that may arise.
3. The Revenue Bond Reserve is an amount required to be on deposit with the District's Fiscal Agent to meet any deficiencies that may occur in meeting the revenue bond debt service. The amount on deposit is equal to the maximum aggregate annual debt service on outstanding revenue bonds.
4. The Replacement Appropriation sets aside funds to replace major equipment items at the end of their useful life.
5. Encumbrances which consist of appropriations committed but not spent by the end of the year.

The total fund balances at the beginning of 1981-82 were $35,210,000. The various 1981-82 ending balances are shown to the right.

...of the Water Utility Enterprise (1981-1982)



Financial Estimates...

Revenue, expenditures and year-end appropriations for the 1982-83 fiscal year as estimated in February, 1983 are shown in the graph on the opposite page.

Revenue from groundwater charges and raw surface water sales is collected semiannually in the month following the 6 month period in which the water was used. Therefore, the 1982-83 revenue projections incorporate the collection for groundwater extractions and raw surface water deliveries made in the latter half of 1981-82 based on groundwater charges and basic user rates of $70 per acre-foot for municipal and industrial (M&I) water and $17.50 per acre-foot for agricultural (Ag) water. The rates applicable to groundwater extractions and raw surface water deliveries made in the first half of 1982-83, which are due and payable in that year, are $75 per acre-foot for M&I water and $18.75 for Ag water.

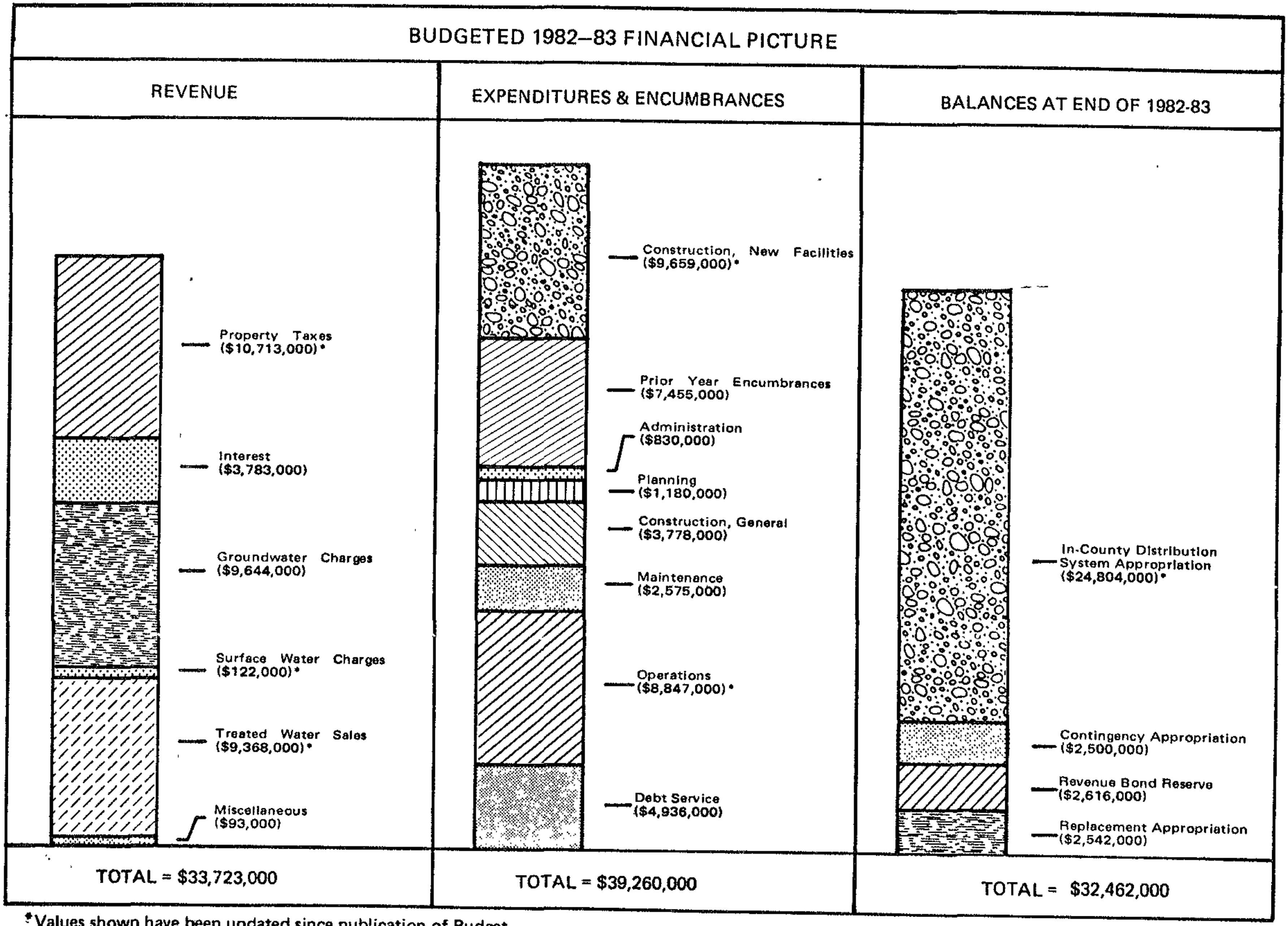
The treated water sales revenue for 1982-83 is based on the basic user rate of $75 and the treated water surcharge rate of $65 for a combined rate of $140 per acre-foot.

Estimated revenue from property taxes includes income from the one percent allocation ($3,413,000), from debt service taxes ($2,200,000), and from the State Water Project Tax ($5,100,000).

The estimated 1982-83 expenditures are as shown in the table on the opposite page. The major expenditure for the year is for Phase III of the Cross Valley Pipeline ($5,500,000) for which the District awarded a construction contract in December of 1982. Other budgeted expenditures include the design of Phase IV of Cross Valley Pipeline and Anderson Force Main ($600,000), the purchase of land for the West Reservoir ($1,000,000) and the purchase of land for Maple Avenue Recharge facility ($2,000,000). The In-County Credit for Hetch Hetchy water purchases is estimated at $300,000.

The overall cost of imported water from the State Water Project has increased slightly in 1982-83. Although the capital and fixed cost components are about the same as in 1981-82, the cost of power to pump State water to the District increased sharply in April 1983 as previously anticipated, resulting in the overall cost increase for State water.

• • •for the Current Year (1982-83)



*Values shown have been updated since publication of Budget.

Financial Projections...

Revenue as projected in February, 1983 for fiscal year 1983-84 is shown on the opposite page. The projected revenue is based on groundwater charges and basic user rates for groundwater extractions and raw surface water deliveries made in the later half of 1982-83, which are due and payable in 1983-84, of $75 per acre-foot of M&I Water and $18.25 per acre-foot of Ag Water. The corresponding rates for groundwater extractions and raw surface water for the first half of 1983-84 and for treated water throughout the year are the recommended $80 per acre-foot of M&I Water and $20 per acre-foot of Ag Water. The treated water surcharge rate for 1983-84 is $70 per acre-foot for a total treated water charge of $150 per acre-foot.

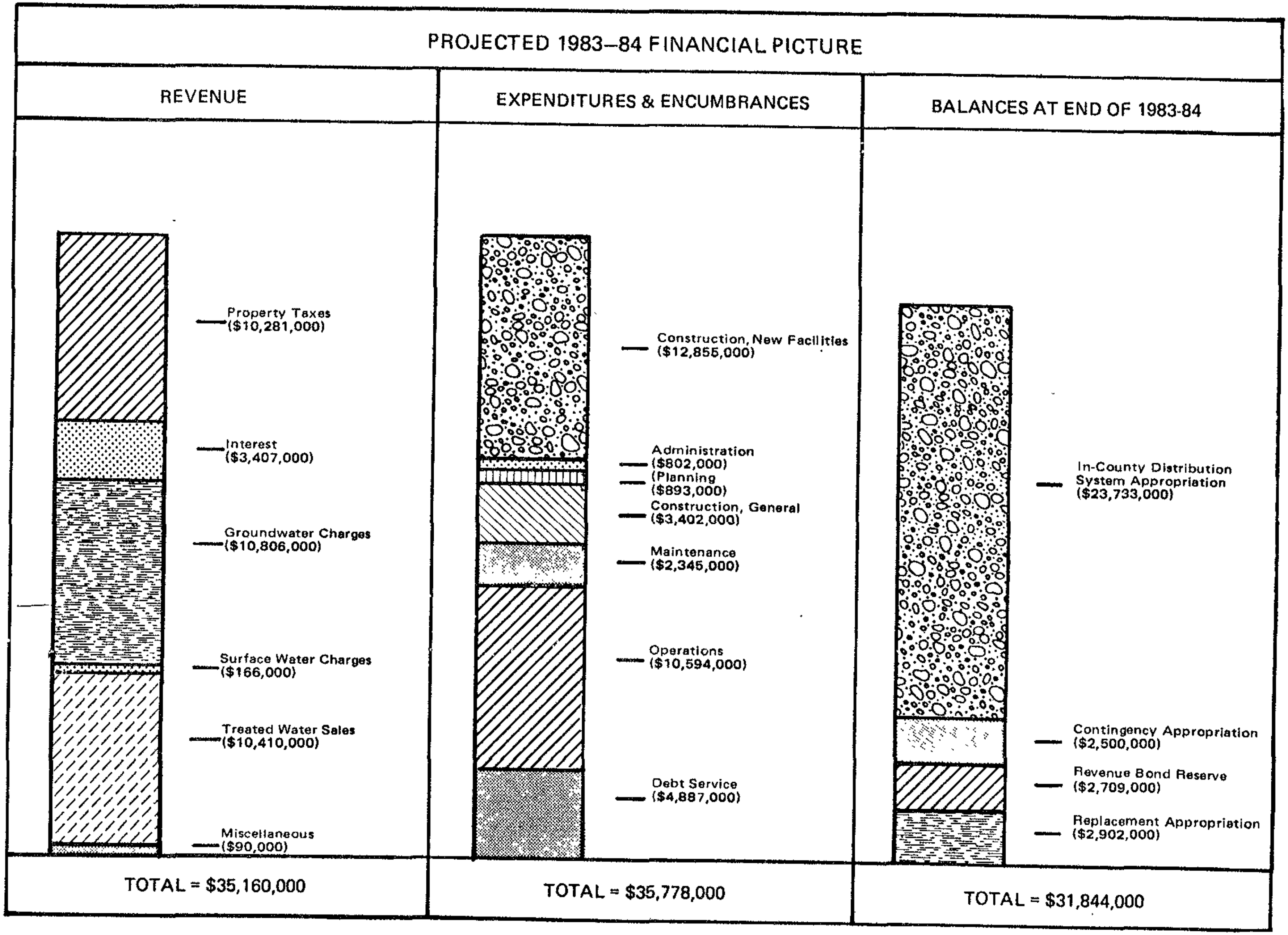
The projected revenue from taxes includes the one percent allocation ($3,580,000), the debt service taxes ($2,160,000), and the State Water Project tax ($4,540,000). With these tax revenues, the ratio of taxes to water charges is less than the 1:2 ratio which has existed in previous years.

Not included in the projections at the right is a Series C Revenue Bond Issue which the District may sell in either 1983-84 or 1984-85 depending on bond market conditions and progress in the proposed construction program. When the sale does occur, it is anticipated that it will be for the full amount of the remaining authorization of $33,000,000.

Projected expenditures for 1983-84 include costs to operate and maintain existing facilities, to purchase State Water Project water and to design and build new facilities. The In-County Credit for Hetch Hetchy water purchases for the year is projected at $220,000.

Major costs are for the repair of Stevens Creek Dam ($4,000,000) and construction of Phase IV of the Cross Valley Pipeline and the Anderson Force Main ($5,200,000). Costs are also included for design of the Penitencia Sludge facility, the Santa Teresa Water Treatment Plant, and the power generating facilities at Anderson Dam.

. . . for the Next Fiscal Year (1983-84)



Water Charges...

Groundwater charges and equivalent basic user rates to be levied in 1983-84 in Zones W-2, W-3.1, W-3.2, W-3.3 and W-3.5 are summarized in the table below. No groundwater charges are to be levied in Zones W-5 and W-6 and the District waives the requirement to report water production of wells in those zones in 1983-84. The countywide ad valorem State Water Project Tax will be levied to generate $4,540,000[1].

GROUNDWATER CHARGES[2]
AND BASIC USER RATES
IN ZONES W-2, W-3.1, W-3.2, W-3.3, AND W-3.5
FOR
FISCAL YEAR 1983-84

Agricultural Water (Ag.)	$20.00/Acre-Foot
Nonagricultural Water (M&I)	$80.00/Acre-Foot

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[1] Adopted March 22, 1983 by the Board of Directors through Resolution 83-16.
[2] Adopted March 22, 1983 by the Board of Directors through Resolution 83-15.

• • • for 1983-1984

WATER RATE COMPONENTS AND WATER CHARGES FOR FISCAL YEAR 1983-84[1]

Components

COMPONENT	RATE
Basic User, Zones W-2, W-3.1, W-3.2, W-3.3, W-3.5	
Agricultural	$ 20.00/AF
Municipal and Industrial	80.00/AF
Basic User, Zones W-5, W-6	
Agricultural	0.00/AF
Municipal and Industrial	0.00/AF
Treated Water Surcharge	
Contract	70.00/AF
Noncontract	25.00/AF
Water Master	8.00/AF
Capital Cost	
Half Road Lateral System	2.75/AF
Power	
Half Road Lateral System	4.00/AF
Evergreen System	35.00/AF
Palo Alto Reclamation System	4.00/AF

Charges

TYPE OF CHARGE	AG WATER	M & I WATER
Groundwater		
Zones W-2, W-3.1, W-3.2, W-3.3, W-3.5	$ 20.00/AF	$ 80.00/AF
Zones W-5, W-6	0.00/AF	0.00/AF
Surface Water		
Evergreen Deliveries	63.00/AF	123.00/AF
Half Road Deliveries	14.75/AF	14.75/AF
Other Zone W-3 Deliveries	8.00/AF	8.00/AF
All Other Deliveries	28.00/AF	88.00/AF
Minimum Charge	56.00/YR	56.00/YR
Stored Water	20.00/AF	80.00/AF
Treated Water		
Contract	-	150.00/AF
Noncontract	-	105.00/AF
Reclaimed Water		
Palo Alto*	32.00/AF	92.00/AF
Gilroy	20.00/AF	80.00/AF

* Under the current Agreement with the City of Palo Alto, up to one million gallons per day is delivered for landscape irrigation use at a charge of $80.00/AF. In addition, up to 400,000 gallons per day would be delivered to the City of Palo Alto at no charge for its in-plant use.

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[1] Adopted by the Board of Directors through Resolutions 81-25(April 14, 1981), 83-14 (March 22, 1983) and 83-15 (March 22, 1983).